

Work Order ID 86168

86168

Page 1

June-21-12 2:30:17 PM

Item ID: D205-634-041

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Replacement Skidtube

Stop

NS2

Start Date: 21/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: ML5

Date: 12/06/21

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2580-041	(DEO) Rev.E

100 0.00

100

DOCUMENT CONTROL

DC 0.00

Document Control

Memo

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG005

110 0.00

110

BENDING MACHINE - SKIDTUBES

CNC Bend 1 0.00

CNC Delta 100 Bender

Memo

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

DC 12/07/30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 21/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		0.00							
120									
Skidtubes	Memo	0.00							
Skidtubes	1- Deburr ends and remove bending marks								
	2- Prepare tube for welding as per QSI 004								
130	QC5- Inspect part completeness to step on W/O	0.00							
130									
QC	Memo	0.00							
Quality Control									

① SAD 12-07-31

1 0 12-07-30 DAS 18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N9000040100

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Start Date: 21/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
140									
Skidtubes									
Skidtubes	<div>Memo<div>0.00</div><div>1-Weld step D2576 as per Dwg. D2580 and QSI 004 A/R Aluminum Rod <i>M182130 AE 12/07/30</i></div><div>2-Grind welds on step as per Dwg D2580 <i>SAD 12-08-02</i></div><div>3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention. <i>CF 12-8-7</i></div><div>4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web.Deburr</div><div>6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr</div><div>7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr</div></div>								
150	QC10- Inspect visual per QSI004- ground welds	0.00							
150									
QC	<div><i>Fwd CAP ok</i></div> <div>Memo</div>	0.00	<div><i>DAS 16 1-13</i></div> <div><i>2/6/19</i></div>						
Quality Control									

DAS 16
269/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Required Date: 09/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							
170 *170* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.	0.00 0.00							
180 *180* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: 1h00 OVEN TEMPERATURE: 320°F FINISH TIME: 1h30	0.00 0.00							

DAS
16
9-80
7/2/08/14

1 26 12-8-8

1 2 (OP) 12/08/08

m/21481

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

QC3- Inspect Part Finish

0.00

190

QC

Memo

0.00

Quality Control

ix & ill ent 08/15

W/O:		WORK ORDER CHANGES					
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Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: Date:

Tooling: Date:

Run Start ***NR1***

QC: Date:

SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

HandFinish

Hand Finishing

Memo

0.00

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 122130

Sikaflex expire date: 13/03

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 122130

Sikaflex expire date: 13/03

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch: 122506

1 2 20 12/08/15

W/O:		WORK ORDER CHANGES					
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Stop ***NS2***

Start Date: 21/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220

Packaging

0.00

220

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location:

PPP Rev:

230

QC21- Final Inspection - Work Order Release

0.00

230

QC

Memo

0.00

Quality Control

DA's
16
8-8 12/06/20

PP 87834

12/8/21

MLJ 12/08/22

MLJ 12/08/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

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Page 1

Work Order ID: 86168

86168

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 21/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
 KJ IPP Rev P 10.02.19
 per PAR09-043 EC verified by:DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
 10.12.01 as per chg003 DD verf:EC IPP REV:R 12.01.23 AS
 PER ECN11-684 VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4202-1 *D4202-1* Spacer		Manufactured	No			140	Each	224.0000	20	20			
<div> <div>B 87948</div> <div> <div>Location</div> <div>Loc Qty</div> <div>Loc Code</div> </div> </div> <div> <div>LG</div> <div>184</div> <div></div> </div> <div> <div>77727</div> <div>5</div> <div></div> </div> <div> <div>83263</div> <div>179</div> <div></div> </div> <div> <div>LG002</div> <div>40</div> <div></div> </div> <div> <div>78806</div> <div>6</div> <div></div> </div> <div> <div>79810</div> <div>34</div> <div></div> </div>													
D2580-1 *D2580-1* 205 Skidtube bent detail		Manufactured	No			110	Each	4.0000	1	1			
<div> <div>B 87606</div> <div> <div>Location</div> <div>Loc Qty</div> <div>Loc Code</div> </div> </div> <div> <div>LG</div> <div>4</div> <div></div> </div> <div> <div>76570</div> <div>2</div> <div></div> </div> <div> <div>77679</div> <div>2</div> <div></div> </div>													
D2576-3 *D2576-3* Step (maching detail)		Manufactured	No			140	Each	76.0000	1	1			
<div> <div></div> <div> <div>Location</div> <div>Loc Qty</div> <div>Loc Code</div> </div> </div> <div> <div>LG</div> <div>76</div> <div></div> </div> <div> <div>74136</div> <div>24</div> <div></div> </div> <div> <div>82257</div> <div>52</div> <div></div> </div>													

**

20 CF 12-8-7

**

DE 12/67/30

**

8E12/67/30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Work Order ID: 86168

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Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 21/06/2012

Required Date: 09/07/2012,

Start Qty: 1.00

Required Qty: 1.00

D2855 Manufactured No

200 Each

19.0000 1 1

D2855

Cap

**

28 12/08/15

Location 84952

Loc Qty

Loc Code

FP002

19

65519

2

73347

14

75074

3

AN3-5A Purchased No

200 Each

835.0000 2 2

AN3-5A

Bolt

**

2 28 12/08/15

Location

Loc Qty

Loc Code

ST350

835

115371

46

117423

124

118626

27

119355

200

120187 ✓

432

121185

6

AN960JD10L *NAS1149D0332J Purchased No

200 Each

0.0000 2 2

***AN960JD10I ***

Washer

**

2 28 12/08/15

12/708 ✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

86168

D205-634-041

Start Date: 21/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

2.078 000

50

50

AI S7-1032-130

Insert

**

50

20

12/08/15

Location

Loc Qty

Loc Code

ST280

122474✓

51

117717

27

118966

22

119775

2

ST282

2027

119530

73

120181

12

121444

1942

AN3C4A

Purchased

No

200

Each

4,859.000

50

50

AN3C4A

BOLT

**

50

20

12/08/15

Location

Loc Qty

Loc Code

ST350

4859

120187

31

120521

28

120769

38

121205

754

121556

8

122151✓

4000

AN960C10L

~~NAS1149C0332~~
R

Purchased

No

200

Each

21.0000

50

50

*AN960C10I *

washer

**

50

20

12/08/15

Location

Loc Qty

Loc Code

ST

122063✓
107534

21

21

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Shop Packet Print

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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D205-634-041

Start Date: 21/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

200 Each

57.0000 1 1

D3566-13

Gasket

**

1 (DP) 12/08/15

Location

Loc Qty

Loc Code

FP 10
83351 10
FP002 47
76947 2
84880 ✓ 45

D3566-5

Manufactured No

200 Each

52.0000 1 1

D3566-5

Gasket

**

1 (DP) 12/08/15

Location

Loc Qty

Loc Code

FP 88821 ✓ 10
82275 10
FP002 42
80374 3
82274 6
84881 33

D3566-1

Manufactured No

200 Each

94.0000 2 2

D3566-1

Gasket

**

2 (DP) 12/08/15

Location

Loc Qty

Loc Code

FP -32
FP002 86240 ✓ 126
68924 2
80919 2
81619 3
83898 15
84879 72

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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 21/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-11

Manufactured No

200

Each

39.0000

1

1

D3564-11

Wearshoe

**

1

(2P)

12/08/15

Location

Loc Qty

Loc Code

FG

87261 ✓

5

77056

5

FP001

34

83910

22

84871

12

D3564-13

Manufactured No

200

Each

48.0000

1

1

D3564-13

Wearshoe

**

1

(2P)

12/08/15

Location

Loc Qty

Loc Code

FP001

2

71594

1

77610

1

FP002

46

82249

22

85512 ✓

24

D3564-9

Manufactured No

200

Each

30.0000

1

1

D3564-9

Wearshoe

**

1

(2P)

12/08/15

Location

Loc Qty

Loc Code

FG

86236 ✓

4

76950

4

FP001

26

67590

4

69943

1

82255

9

84870

12

W/O:		WORK ORDER CHANGES					
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Start Date: 21/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200

Each

61.0000

1

1

D3564-5

Wearshoe

**

1

(2P)

12/08/15

Location

Loc Qty

Loc Code

FG

86234 ✓

2

34806

2

FP001

59

77609

1

80343

1

82254

8

84869

25

85475

24

D2594-3

Manufactured No

200

Each

2,396.000

16

16

D2594-3

O-Ring, 205 Skidtube

**

16

(2P)

12/08/15

Location

Loc Qty

Loc Code

FP001

2396

65518

41

79496

984

79573

50

79755 ✓

1321

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-21-12 2:30:23 PM

Page 7

Work Order ID: 86168

86168

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 21/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2594-1

Manufactured No

200

Each

699.0000

16

16

D2594-1

Plug, 205 Skidtube

**

16 (20) 12/08/15

Location

Loc Qty

Loc Code

FP001

86391✓

84

73401

30

74442

6

79495

48

FP-A

615

73401

0

78590

205

84951

410

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960J10L)
27			8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4 3 5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4 3 5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

RELEASED
2011-08-29

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 86168 MCT
12/06/21

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	96.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#		
DRAWN	RF		
CHECKED	10		
MFG. APPR.	10		
APPROVED	10		
DE APPR	10		
DATE	11.06.21		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2580
REV. E
SHEET 1 OF 8
TITLE 205 SKIDTUBE ASSEMBLY
SCALE NTS

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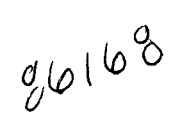
Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DEO ATTACHE
RELEASED
2011-08-29
JW

DETAIL C D3-2
SCALE 5X

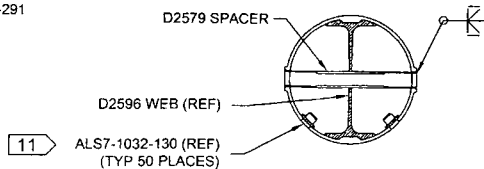


Diagram illustrating the grinding and flushing locations for the D2576-3 step. The diagram shows a cross-section of a component with a central cavity. Key features and labels include:

- GRIND FLUSH 4 PL**: Points to the top surface of the central cavity.
- GRIND FLUSH**: Points to the side surface of the central cavity.
- D2576-3 STEP**: Points to the outer rim of the component.
- GRIND FLUSH**: Points to the bottom surface of the central cavity.
- LOCATION RIDGE ON UNDERSIDE OF D2576-3**: Points to a ridge on the underside of the outer rim.
- 1/4**: A dimension line indicating a distance of 1/4 inch from the bottom surface to the location ridge.

DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG APPR.	10	D2580	SHEET 2 OF 6
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR FOR COPIES OR COMMUNICATIONS TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

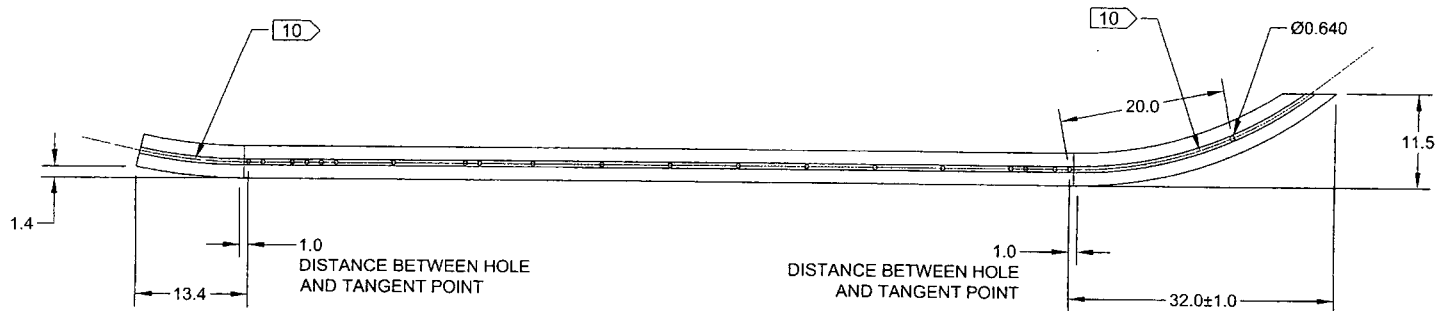
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

06/60



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-28
JW

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. E
CHECKED	RF	D2580	SHEET 3 OF 8
MFG APPR.	RF	TITLE	SCALE
APPROVED	RF	205 SKIDTUBE ASSEMBLY	NTS
DE APPR	RF	DATE	11.06.21
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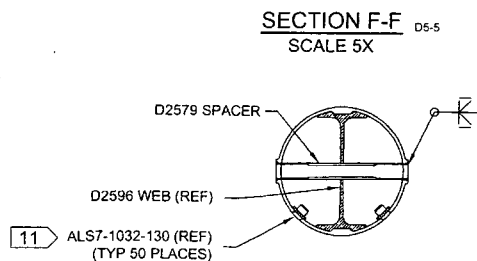
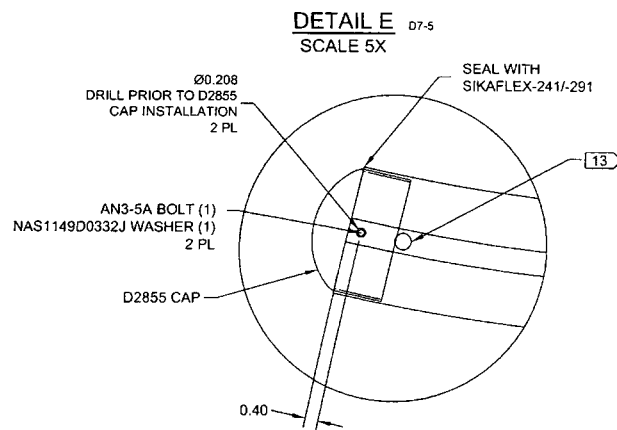
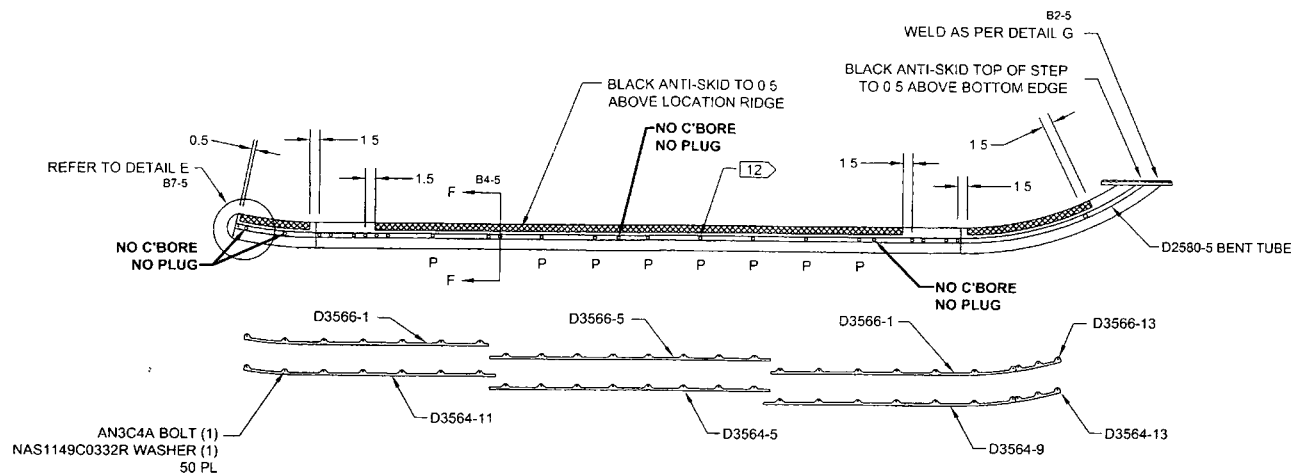
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

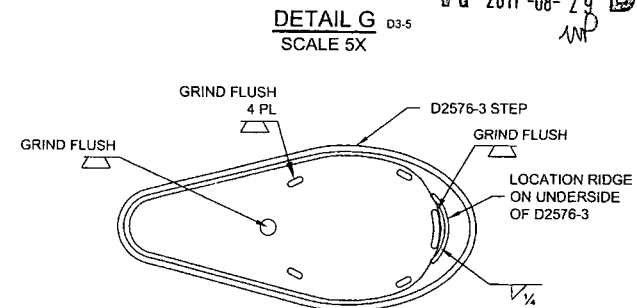
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (24 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG APPR.	AP	D2580	SHEET 4 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

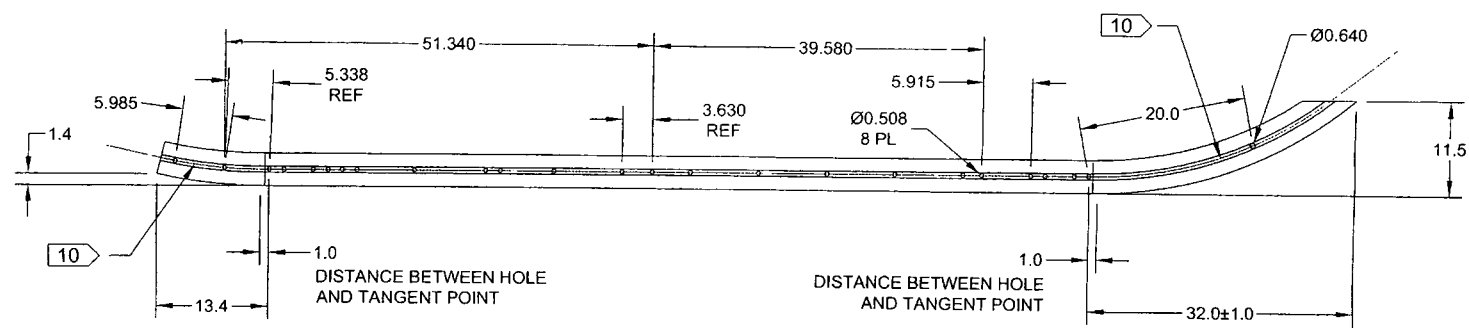
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

26168



D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED
RELEASED
2011-08-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D2580	SHEET 5 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
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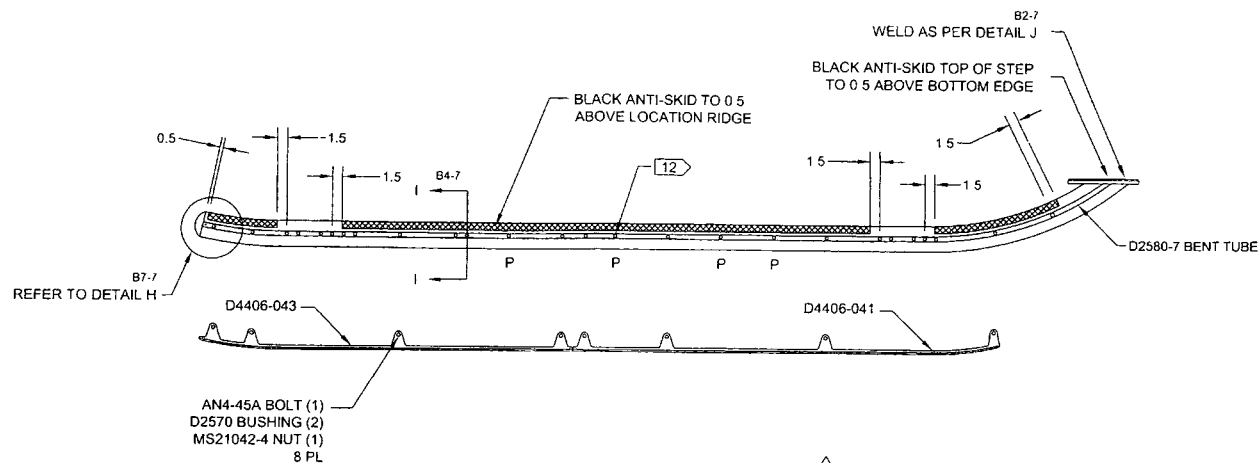
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

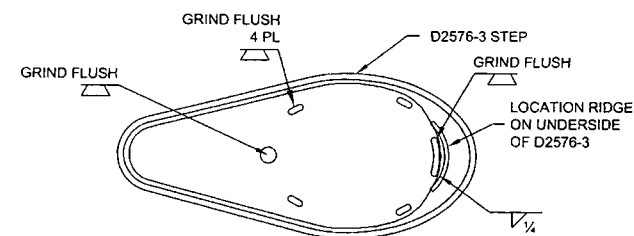


D2580-047 ASSEMBLY DETAIL

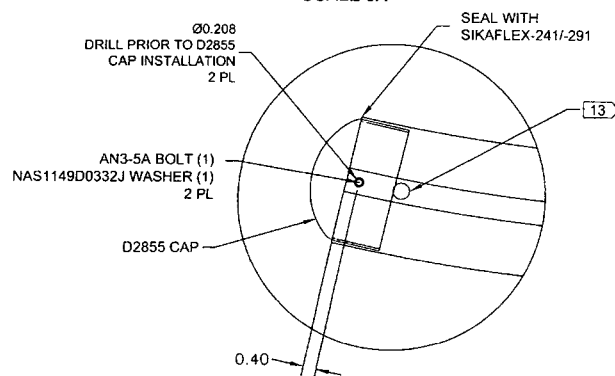
DEO ATTACHED

RELEASE
2011-08-29

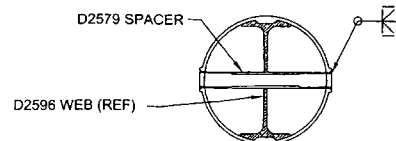
DETAIL J D3-7
SCALE 5X



DETAIL H C6-7
SCALE 5X



SECTION I-I 05-7
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0 508 HOLES ONLY:**
- 1. CHAMFER HOLE 0.050 X 45°**
 - 2. INSERT D2579 SPACER (25 PLACES)**
 - 3. WELD INTO PLACE AND GRIND FLUSH**
 - 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP**

DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKSBURY, ONTARIO, CANADA	
CHECKED	40	DRAWING NO	REV. E
MFG APPR	4	D2580	SHEET 6 OF 6
APPROVED	40	TITLE	SCALE
DE APPR.	4	205 SKIDTUBE ASSEMBLY	NT
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

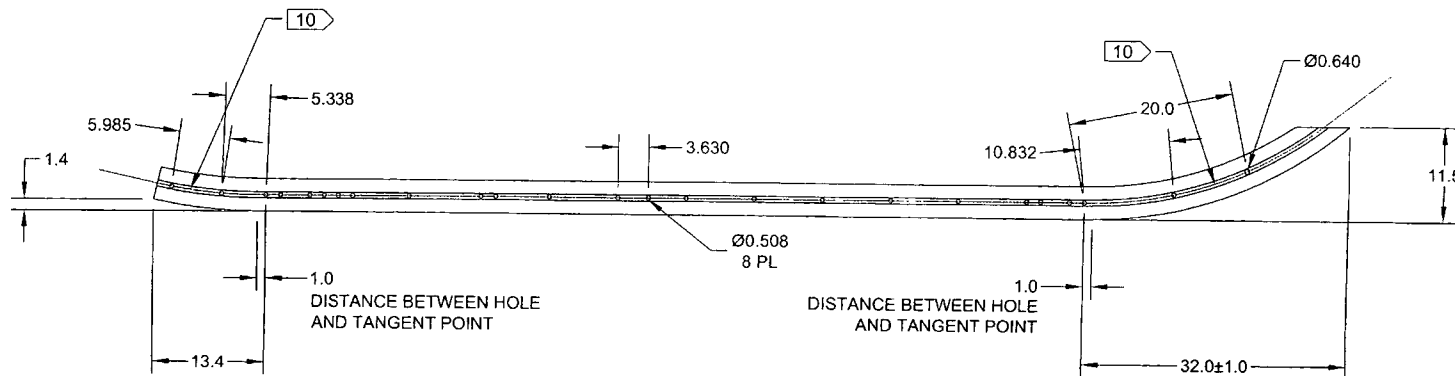
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

86160



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)



DEO ATTACHED
RELEASED
2011-08-29
ND

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO	REV. E
CHECKED	ND	D2580	SHEET 7 OF 8
MFG. APPR.	ND	TITLE	SCALE
APPROVED	ND	205 SKIDTUBE ASSEMBLY	NTS
DE APPR.	ND	DATE 11.06.21	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

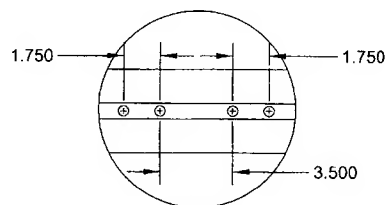
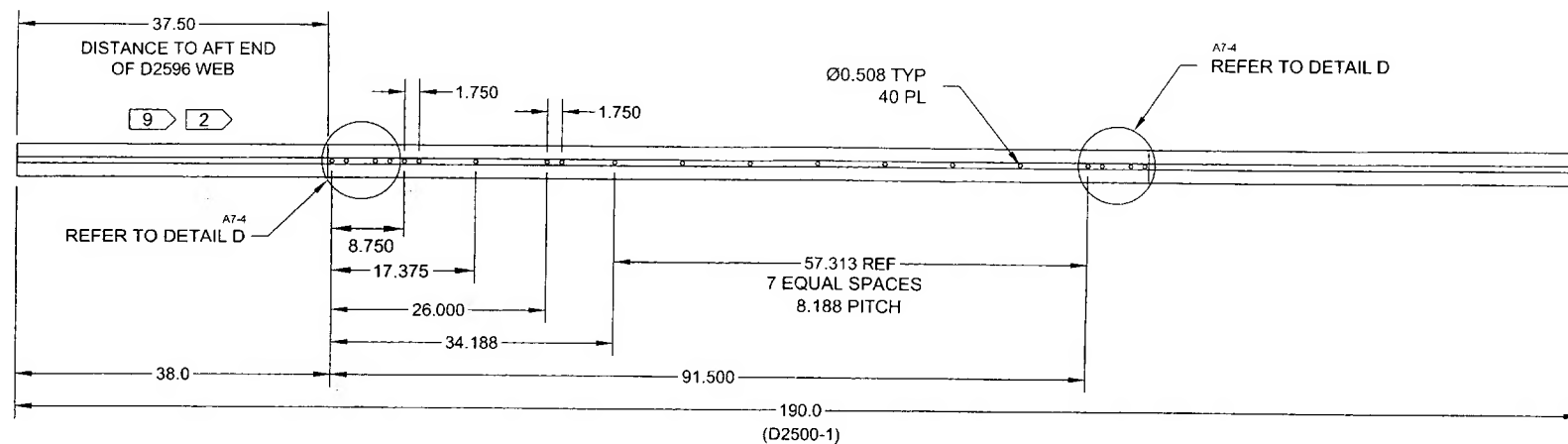
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

26.168



DETAIL D D3-4
SCALE 5X C7-4

D2580-101 TUBE

DEO ATTACHED
RELEASED
R 2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	AP	D2580	SHEET 8 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>ER</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

IS

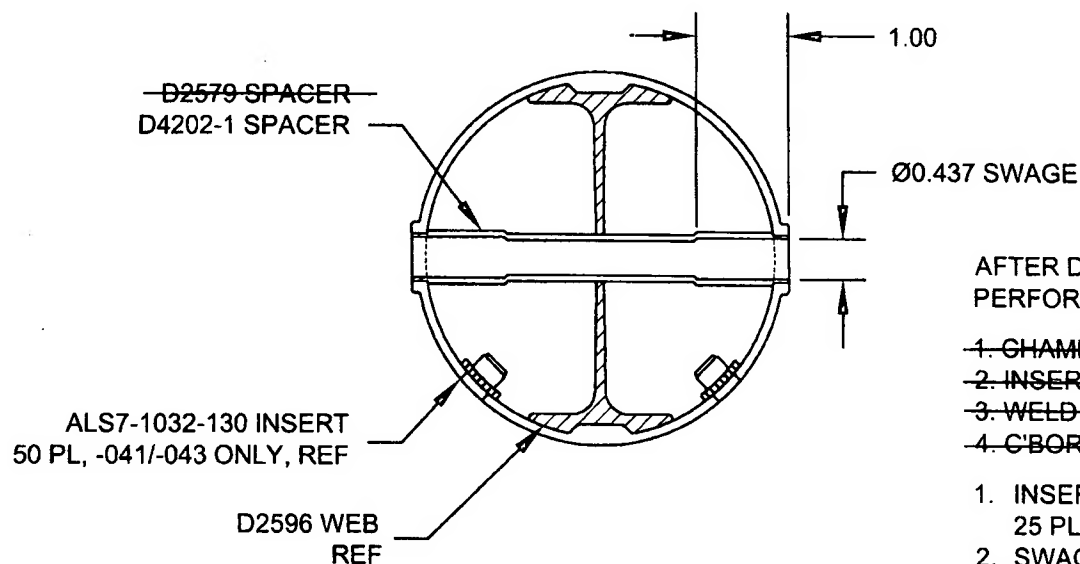
	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

*** FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG
IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.

RELEASED
2011-12-14 *[Signature]*



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B, F-F, I-I
NOT TO SCALE

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries